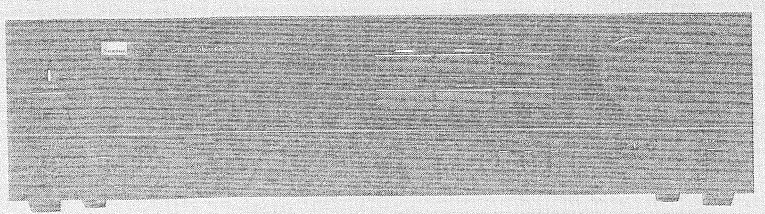
SERVICE MANUAL

INTEGRATED AMPLIFIER

SANSUI AU-G50X



CAUTION

1. Parts identified by the ⚠ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

Sansui

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

Power output
Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.004% total harmonic distortion.
60 watts per channel into 8 ohms.
Load impedance..... 8 ohms
Total harmonic distortion
..... less than 0.004% at or below rated min. RMS power output
Intermodulation distortion
(60 Hz: 7 kHz=4:1 SMPTE method)
..... less than 0.004% at rated power output
Frequency response (at 1 watt)
Overall (from AUX, CD, TUNER, TAPE PLAY-1, 2) ..... DC to 180,000 Hz, +0 dB −3.0 dB
RIAA curve deviation (PHONO-MM, 20 Hz to 20 kHz)
..... +0.2 dB, −0.2 dB
Input sensitivity and impedance (at 1 kHz)
PHONO (MC HIGH) .. 250 μV/40 ohms
(Max. input capability: 12 mV at 1 kHz, less than 0.03% total harmonic distortion)
PHONO (MC LOW) ... 100μV/5.3 ohms
PHONO (MM)..... 2.5 mV/47 kohms
(Max. input capability; 120 mV at 1 kHz, less than 0.03% total harmonic distortion)
CD, AUX..... 150 mV/47 kohms
TUNER, TAPE PLAY-1, 2
..... 150 mV/47 kohms
Signal to noise ratio (short-circuit, A-network)
PHONO (MC)..... 76 dB
PHONO (MM)..... 82 dB
CD, AUX..... 105 dB
TUNER, TAPE PLAY-1, 2
..... 105 dB
Controls and Filter
BASS ..... +10 dB, −8 dB at 50 Hz
TREBLE..... ±7 dB at 10 kHz
LOUDNESS ..... +9 dB at 50 Hz
+5 dB at 10 kHz
(VOLUME: −30 dB position)
FILTERS
LOW..... −3 dB at 20 Hz (6 dB/oct)
HIGH..... −3 dB at 10 kHz (6 dB/oct)
Power requirements
Power voltage..... 220/240V (50/60 Hz)
Power consumption.... 440 watts
Dimensions..... 430 mm (16-15/16″) W
111 mm (4-3/8″) H
329 mm (13″) D
Weight..... 8.4 kg (18.5 lbs) net
9.5 kg (20.9 lbs) packed

* Design and specifications subject to changes without notice for improvements.

CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX (EXPORT) on the parts list and the schematic diagram mean followings respectively.

   UL..... Manufactured for U.S.A market.
   (Underwriters Laboratories approved model.)
   CSA..... Manufactured for Canadian market.
   SA..... Manufactured for South African market.
   BS, UK ..... Manufactured for United Kingdom market.
   EU ..... Manufactured for European market.
   AS..... Manufactured for Australian market.
   XX (EXPORT) ..... Standard Version.
   NON MARK ..... Common Parts.

2. Some printed circuit boards are not supplied as the assembled. To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.

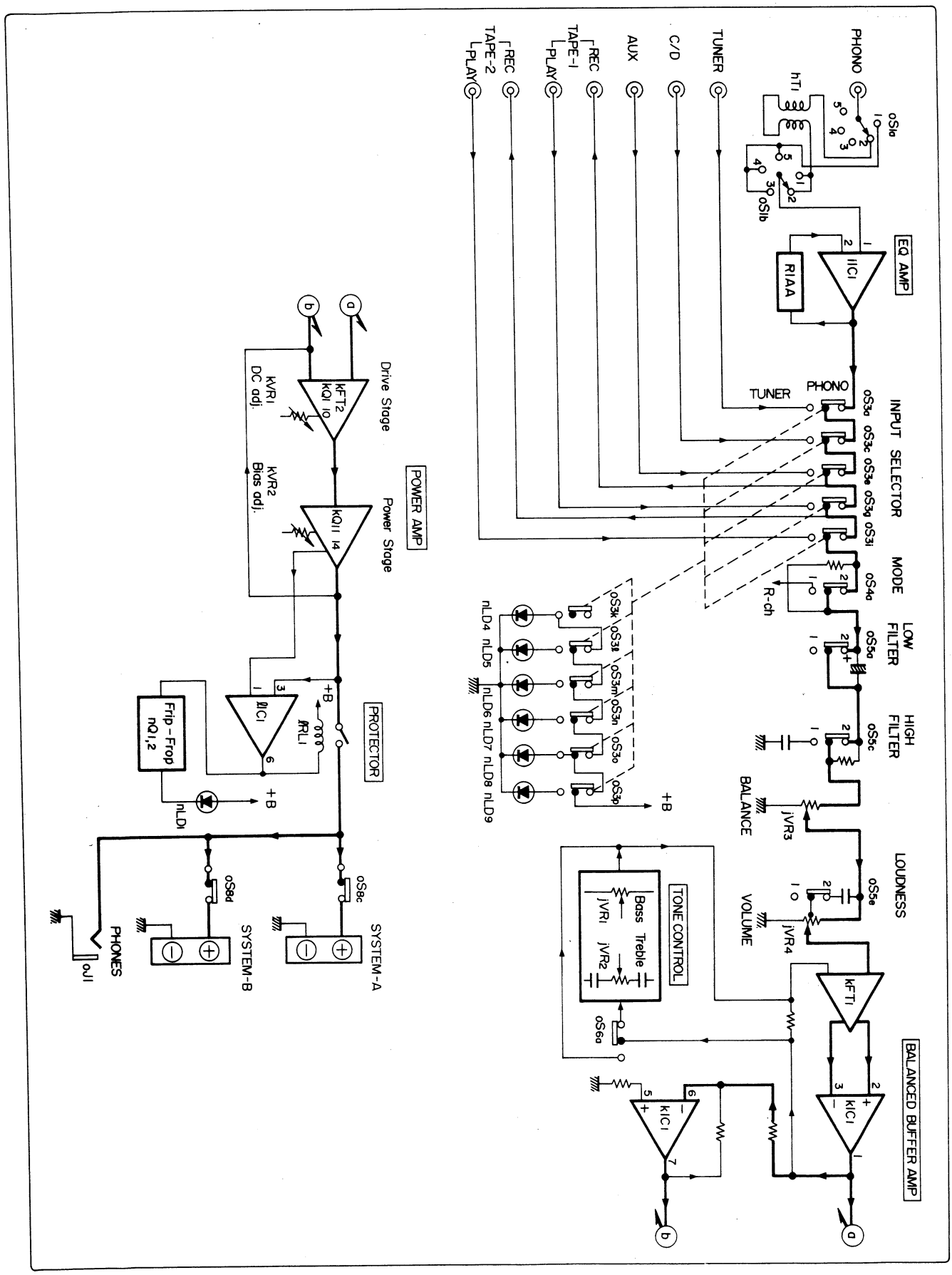
3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

4. Abbreviations in this service manual are as follows.

•Abbreviations List

C.R.	: Carbon Resistor	E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	Ta.C.	: Tantalum Capacitor
Ce.R.	: Cement Resistor	F.C.	: Film Capacitor
M.R.	: Metal Film Resistor	M.P.	: Metalized Paper Capacitor
F.R.	: Fusing Resistor	P.C.	: Polystyrene Capacitor
N.I.R.	: Non-Inflammable Resistor	G.C.	: Gimmic Capacitor
A.R.	: Array Resistor	A.C.	: Array Capacitor
C.C.	: Ceramic Capacitor	V.R.	: Variable Resistor
C.T.	: Ceramic Capacitor, Temperature Compensation	S.V.R.	: Semi Variable Resistor
E.C.	: Electrolytic Capacitor	SW.	: Switch
E.L.	: Low Leak Electrolytic Capacitor	Chip R.	: Chip Resistor
E.B.	: Bi-Polar Electrolytic Capacitor	Chip C.	: Chip Capacitor

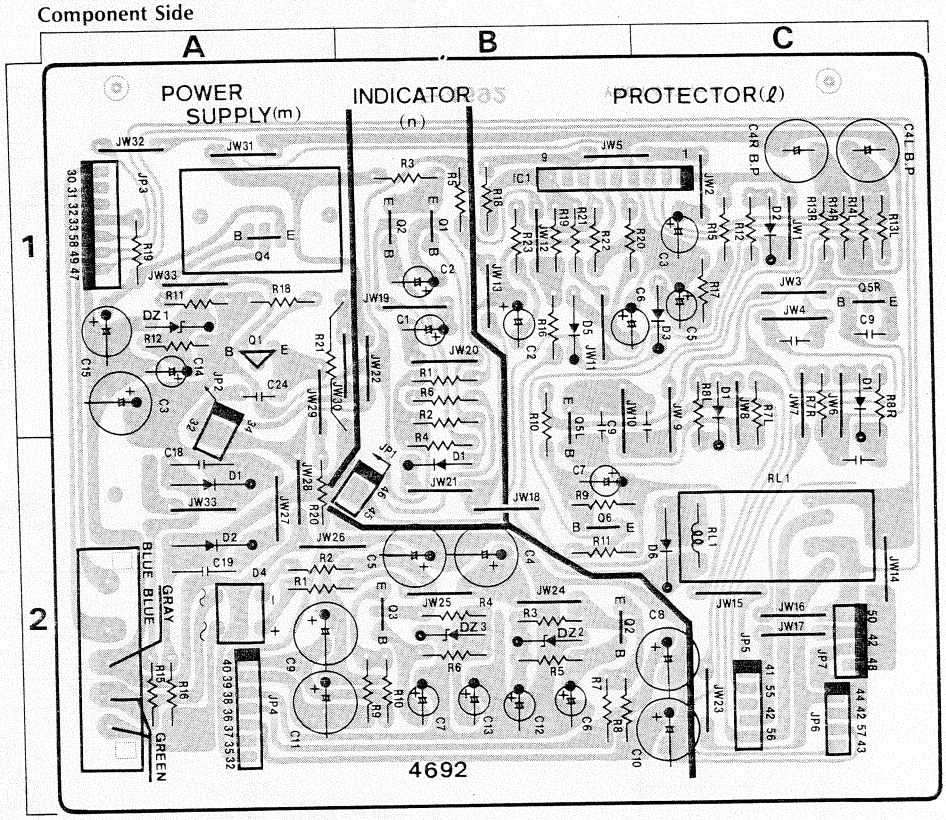
1. BLOCK DIAGRAM



2. PARTS LOCATION & PARTS LIST

2-1. F-4692 Protector Board (Stock No. 00920005)

Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
IQ5	46581701	2SC1845
IQ6	46581601	2SA992
•IC		
⚠IIC1	46207600	TA7317P
•Diode		
ID1	03117600	1S2473T77
	or 46086000	1S1588TP-3
ID2	03117600	1S2473T77
	or 46086000	1S1588TP-3
ID3	03117600	1S2473T77
	or 46086000	1S1588TP-3
ID5	03117600	1S2473T77
	or 46086000	1S1588TP-3
ID6	03117700	10E-2
⚠IR16	00133000	220Ω 1/2W N.I.R.
IC2	46310700	0.47μF 100V E.C.
IC3	46295200	47μF 16V E.C.
IC4	48145900	220μF 6.3V E.B.
IC5	46302400	1μF 50V E.C.
IC6	46300000	47μF 35V E.C.
IC7	46302800	10μF 50V E.C.
IC9	46283300	0.022μF 50V F.C.
IRL1	46254900	Relay AP24D2
•Transistor		
⚠mQ1	03083901	2SD313AL
⚠	or 46546701	2SD880
⚠mQ2	46614101	2SC3243
⚠mQ3	46614001	2SA1283

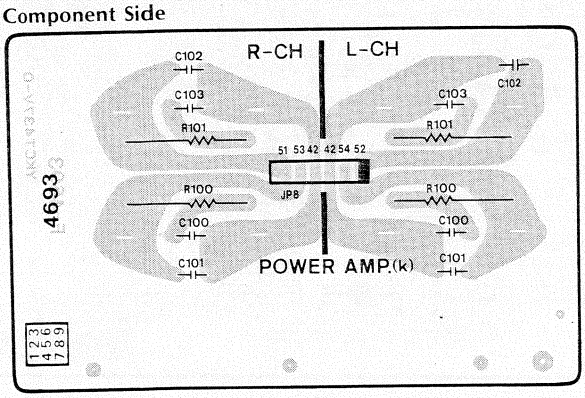
Parts No.	Stock No.	Description
•Diode		
⚠mD1	03117700	10E-2
mD2	03117700	10E-2
⚠mD4	46273600	DBB10-B
⚠	or 48192000	DBB10E
⚠	or 48192100	DBB10G
•Zener Diode		
mDZ1	46115100	05Z18-Y
	or 46115200	05Z18-Z
mDZ2	46115400	05Z20-Y
	or 46115500	05Z20-Z
mDZ3	46115400	05Z20-Y
	or 46115500	05Z20-Z
⚠mR1	00135800	4.7Ω 1/2W N.I.R.
⚠mR2	00135800	4.7Ω 1/2W N.I.R.
⚠mR7	00132900	22Ω 1/2W N.I.R.
⚠mR8	00134200	330Ω 1/2W N.I.R.
⚠mR9	00134200	330Ω 1/2W N.I.R.
⚠mR15	00134600	3.3Ω 1/2W N.I.R.
⚠mR16	00134600	3.3Ω 1/2W N.I.R.
⚠mR20	00135400	470Ω 1/2W N.I.R.
mC3	46300600	220μF 35V E.C.
mC4	46300600	220μF 35V E.C.
mC5	46300600	220μF 35V E.C.
mC6	46297700	47μF 25V E.C.
mC7	46297700	47μF 25V E.C.
mC8	46298300	220μF 25V E.C.
mC9	46298300	220μF 25V E.C.
mC10	46298300	220μF 25V E.C.
mC11	46298300	220μF 25V E.C.
mC12	46302400	1μF 50V E.C.
mC13	46302400	1μF 50V E.C.

Parts List <F-4692>

Parts No.	Stock No.	Description
mC14	46302400	1μF 50V E.C.
mC18	08680400	0.01μF 500V C.C.
⚠mC19	08680400	0.01μF 500V C.C.
•Transistor		
nQ1	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
nQ2	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
•Diode		
nD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
nC1	46302700	4.7μF 50V E.C.
nC2	46302700	4.7μF 50V E.C.

2-2. F-4693 SPEAKERS Terminal Board

Component Side

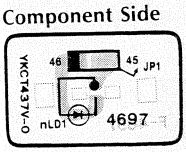


Parts List

Parts No.	Stock No.	Description
	48123100	8P Terminal, SPEAKER

2-3. F-4697 PROTECTOR Indicator Board

Component Side

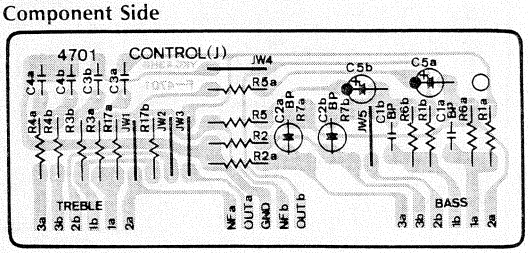


Parts List

Parts No.	Stock No.	Description
•LED		
nLD1	46169300	SEL1210S, protector

2-4. F-4701 Control Board

Component Side

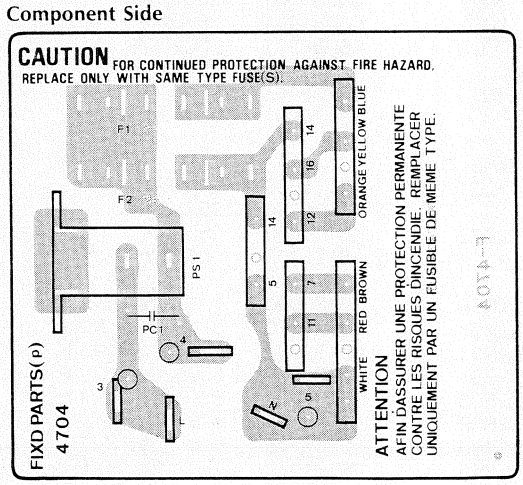


Parts List

Parts No.	Stock No.	Description
jC1	46697300	0.075μF 50V F.C.
jC2	46936900	0.15μF 50V E.B.
jC3	46695500	0.013μF 50V F.C.
jC4	46283500	0.033μF 50V F.C.

2-5. F-4704 POWER SW. Board

Component Side

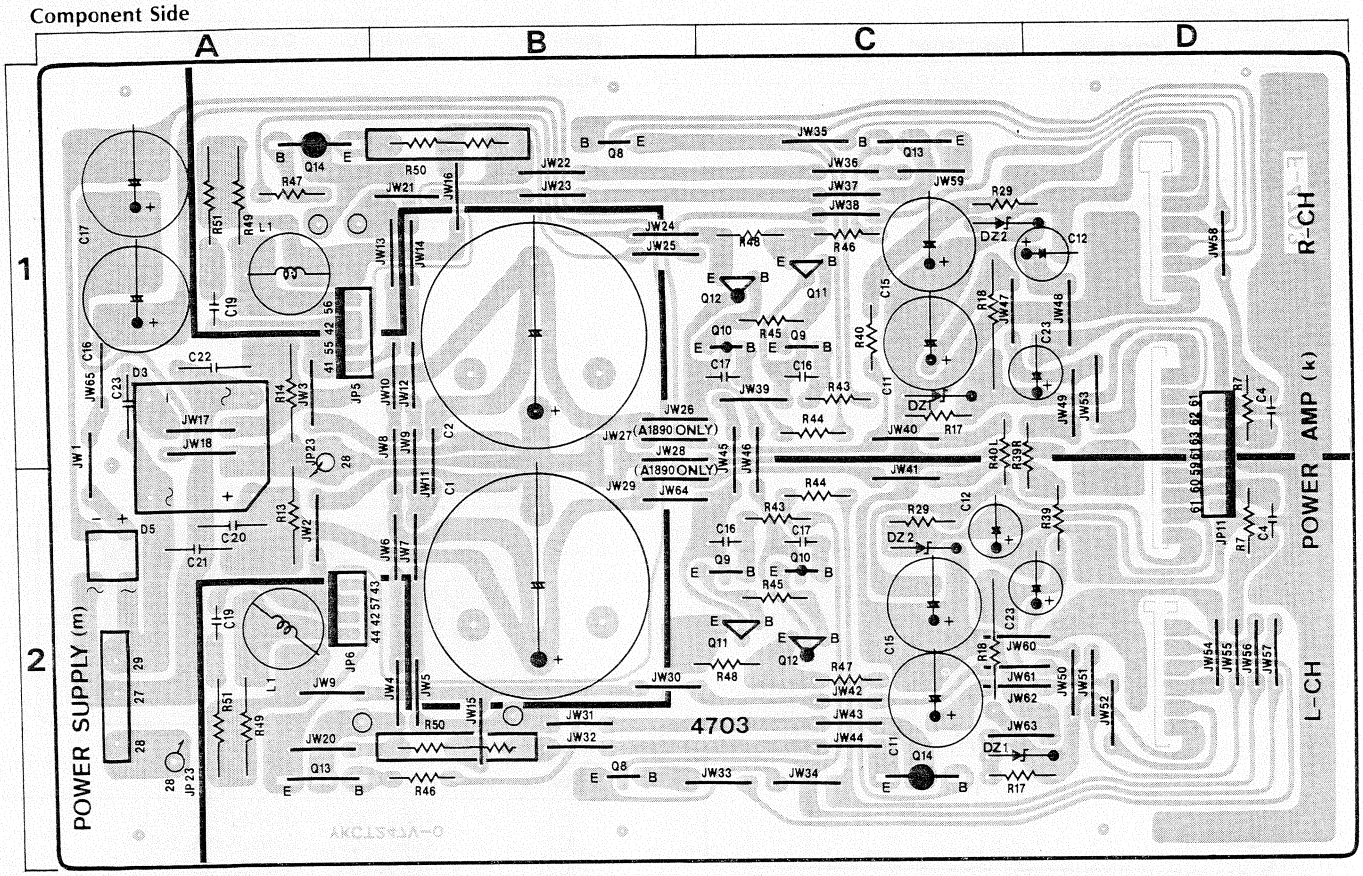


Parts List

Parts No.	Stock No.	Description
⚠pC1	46425800	0.01μF 400V C.C.
⚠pF2	07184900	Fuse 1.6A
⚠pS1	48113300	Push SW., POWER

2-6. F-4703 Driver Amp & Power Supply Board (Stock No. 00919605)

Component Side



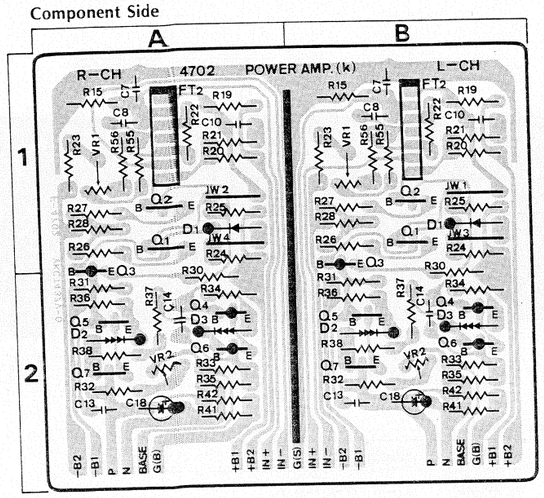
Parts List

Parts No.	Stock No.	Description
•Transistor		
⚠kQ8	03067401	2SC1845
kQ9	48113001	2SC2229
kQ10	48112901	2SA949
kQ11	03086101	2SD357
kQ12	03034401	2SB527
⚠kQ13	46085301	2SC2581
⚠	or 48120101	2SC3182
⚠kQ14	46085401	2SA1106
⚠	or 48120001	2SA1265
•Zener Diode		
kDZ1	46115000	05Z18-X
	or 46115100	05Z18-Y
kDZ2	46115600	05Z22-X
	or 46115700	05Z22-Y
⚠kR18	46625600	1.2kΩ 2W N.I.R.
⚠kR23	00137200	820Ω 1/2W N.I.R.
⚠kR24	00137200	820Ω 1/2W N.I.R.
⚠kR31	00137200	820Ω 1/2W N.I.R.
⚠kR36	00137200	820Ω 1/2W N.I.R.
⚠kR39	00137100	82Ω 1/2W N.I.R.
⚠kR40	00137100	82Ω 1/2W N.I.R.
⚠kR45	00131000	1kΩ 1/2W N.I.R.
⚠kR46	00135800	4.7Ω 1/2W N.I.R.

Parts No.	Stock No.	Description
⚠kR47	00135800	4.7Ω 1/2W N.I.R.
⚠kR48	00132500	180Ω 1/2W N.I.R.
⚠kR49	00133400	2.2Ω 1/2W N.I.R.
⚠kR50	46644800	0.22Ω 5WX2 Ce.R.
⚠kR51	46622700	4.7Ω 2W N.I.R.
kC19	46284100	0.1μF 50V F.C.
kL1	42903700	Peaking Coil
•Diode		
⚠mD3	46864000	RB602
⚠	or 46865300	DBA60C
⚠mD5	46273700	DBB10-C
⚠	or 48192000	DBB10E
⚠	or 48192100	DBB10G
⚠mR13	00144200	8.2kΩ 1W N.I.R.
⚠mR14	00144200	8.2kΩ 1W N.I.R.
mC1	48076400	10000μF 63V E.C.
mC2	48076400	10000μF 63V E.C.
mC20	08680400	0.01μF 500V C.C.
mC21	08680400	0.01μF 500V C.C.
mC22	08680400	0.01μF 500V C.C.
mC23	08680400	0.01μF 500V C.C.

2-7. F-4702 Differential Amp Board (Stock No. 00919705)

Component Side

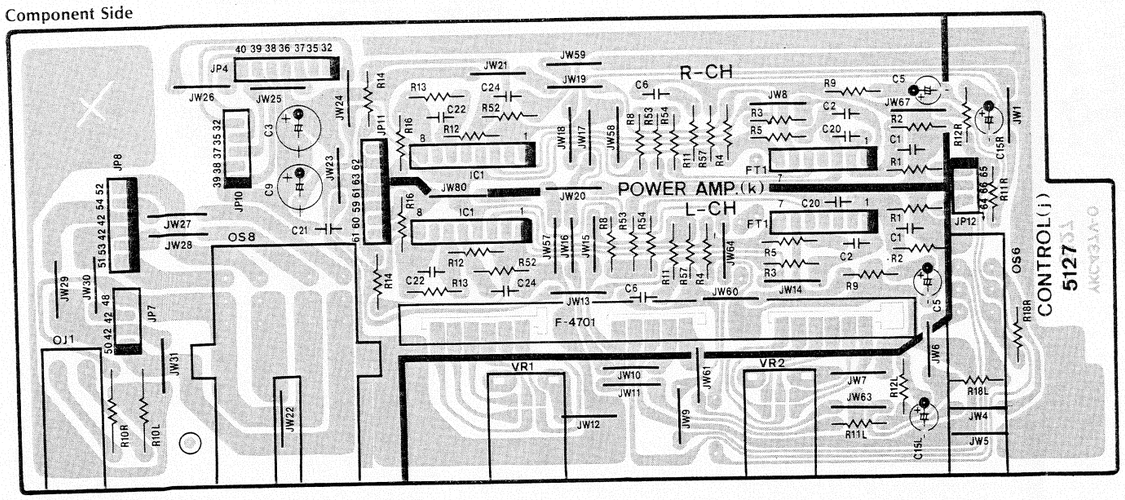


Parts List

Parts No.	Stock No.	Description
•Transistor		
kQ1	46581701	2SC1845
kQ2	46581701	2SC1845
kQ3	46581601	2SA992
kQ4	46581601	2SA992
kQ5	46581701	2SC1845
kQ6	46728201	2SA1145
	or 48112901	2SA949
kQ7	46728301	2SC2705
	or 48113001	2SC2229
•FET		
kFT2	07110000	μPA68H-L
	or 07110001	μPA68H-M
•Diode		
kD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
kD2	03401700	Varistor MV103
kD3	03401700	Varistor MV103
kC7	46653200	100pF 100V F.C.
kC10	46655600	1000pF 100V F.C.
kVR1	10335700	100Ω (B) S.V.R., DC 0V
kVR2	48078400	470Ω S.V.R., Bias

2-8. F-5127 Control & Power Amp Board (Stock No. 00918605)

Component Side



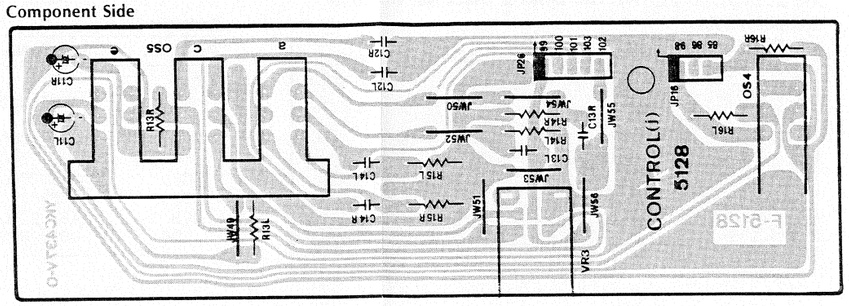
Parts List

Parts No.	Stock No.	Description
jVR1	48077500	50kΩ (C) V.R., BASS
jVR2	48077500	50kΩ (C) V.R., TREBLE
•FET		
kFT1	07110000	μPA68H-L
	or 07110001	μPA68H-M
•IC		
kIC1	46288800	M5220L

Parts No.	Stock No.	Description
⚠kR10	00133000	220Ω 1/2W N.I.R.
kC1	46653200	100pF 100V F.C.
kC2	46655200	680pF 100V F.C.
kC24	46283300	0.022μF 50V F.C.
oS6	48077000	Push SW., TONE
oS8	48077200	Push SW., SPEAKERS
oJ1	46579600	Jack, PHONES

2-9. F-5128 Control Board (Stock No. 00918705)

Component Side



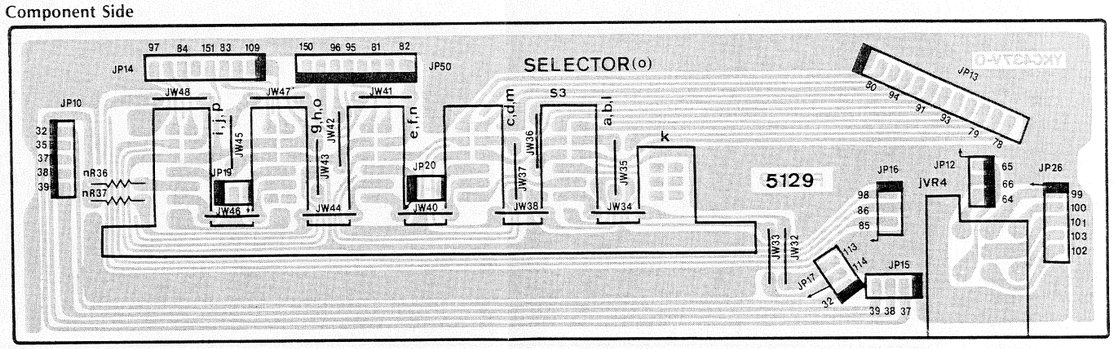
Parts List

Parts No.	Stock No.	Description
jC12	46531300	5600pF 50V F.C.
jC13	46654400	330pF 100V F.C.
jC14	46283300	0.022μF 50V F.C.

Parts No.	Stock No.	Description
jVR3	48077400	250kΩ (MN) V.R., BALANCE
oS4	48077000	Push SW., MODE
oS5	48076900	Push SW., FILTERS

2-10. F-5129 SELECTOR Board

Component Side



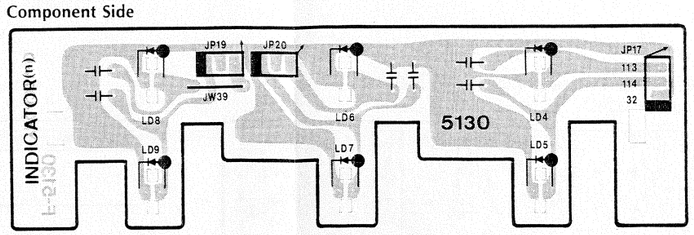
Parts List

Parts No.	Stock No.	Description
jVR4	48077600	150kΩ (B) V.R., VOLUME
oS3	48271300	Push SW., INPUT SELECTOR

Parts No.	Stock No.	Description
⚠mR36	00137200	820Ω 1/2W N.I.R.
⚠mR37	00136000	560Ω 1/2W N.I.R.

2-11. F-5130 Indicator Board

Component Side



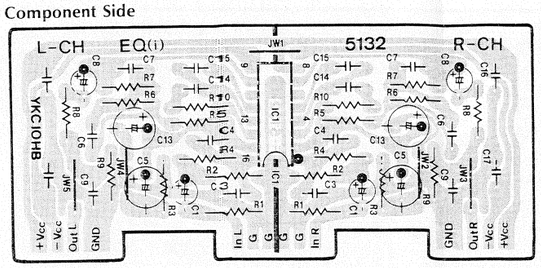
Parts List

Parts No.	Stock No.	Description
•LED		
nLD4	48076100	SEL2413E, PHONO
nLD5	48076100	SEL2413E, TUNER
nLD6	48076100	SEL2413E, CD

Parts No.	Stock No.	Description
nLD7	48076100	SEL2413E, AUX
nLD8	48272600	SEL2213C, TAPE-1
nLD9	48272600	SEL2213C, TAPE-2/PCM

2-12. F-5132 EQ Amp. Board (Stock No. 00919105)

Component Side

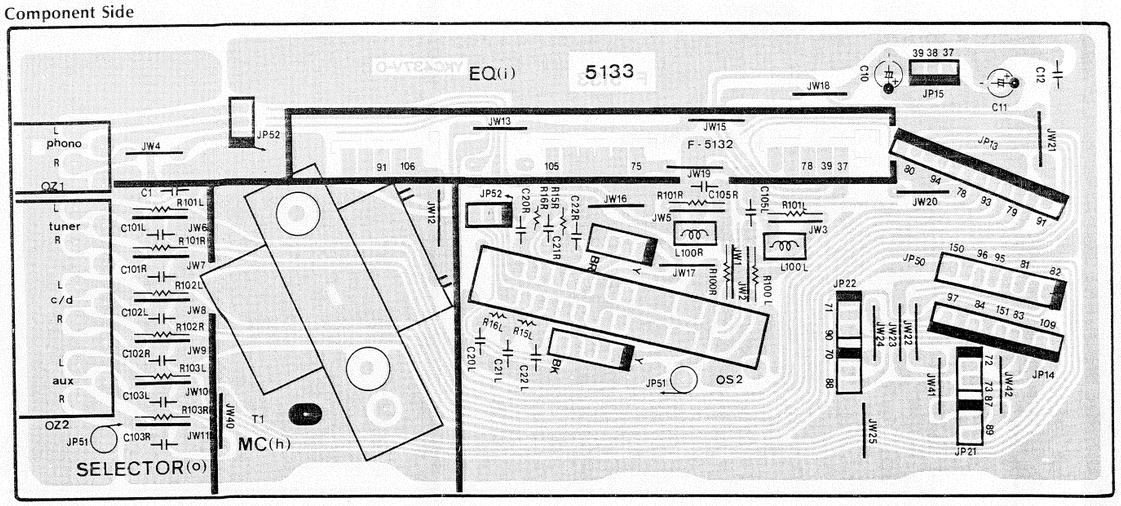


Parts List

Parts No.	Stock No.	Description
•IC		
iIC1	48316800	M5240P FETOP RIAA
iC3	46654000	220pF 100V F.C.
iC4	46653200	100pF 100V F.C.
iC6	46697000	0.056μF 50V F.C.
iC7	46695700	0.016μF 50V F.C.
iC9	46282400	3300pF 50V F.C.
iC14	46282900	0.01μF 50V F.C.

2-13. F-5133 MC Head Transformer Board

Component Side

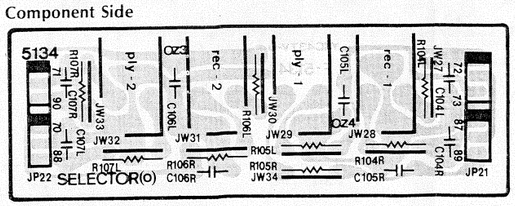


Parts List

Parts No.	Stock No.	Description
hT1	48272500	MC HEAD Transformer
oS2	48271400	Slide SW., CARTRIDGE SELECTOR
	46438100	2P Terminal, PHONO
	46546800	6P Terminal, TUNER/CD

2-14. F-5134 Input Terminal Board

Component Side

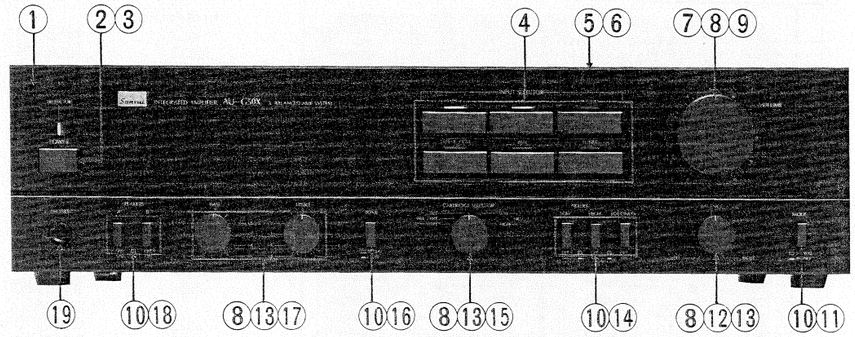


Parts List

Parts No.	Stock No.	Description
	46363800	4P Terminal, TAPE-1
	46363800	4P Terminal, TAPE-2/PCM

3. OTHER PARTS

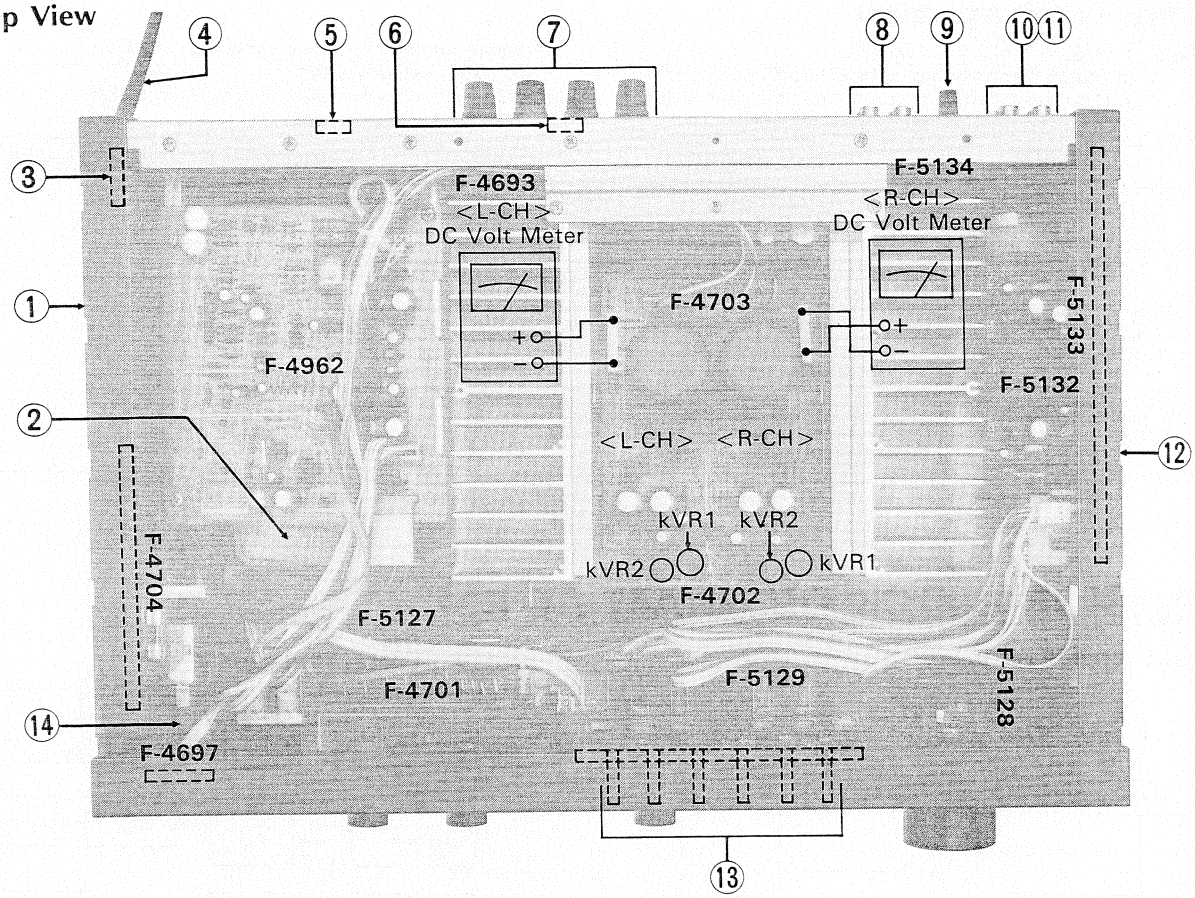
3-1. Front View



Parts List <Front View>

Parts No.	Stock No.	Description
1	47969200	Front Panel Ass'y
2	47633700	Knob, POWER
⚠ 3	48113300	Push SW., POWER
4	48271300	Push SW., INPUT SELECTOR
5	47648300	Bonnet
6	47560800	Grille of Bonnet
7	48077600	150kΩx2 VR., VOLUME
8	47287800	FS Holder
9	47636400	Knob, VOLUME
10	48077000	Push SW., MODE
11	47636300	Push Knob, MODE, LOW, HIGH, LOUDNESS, TONE, SPEAKERS
12	48077400	250kΩ (MN) VR., BALANCE
13	47636600	Knob, BALANCE CARTRIDGE SELECTOR, TREBLE, BASS
14	48076900	Push SW., LOW, HIGH, LOUDNESS
15	48271500	Rotary SW., with Flexible Wire
16	48077000	Push SW., TONE
17	48077500	50kΩ (C) VR., TREBLE, BASS
18	48077200	Push SW., SPEAKERS
19	46579600	Jack, PHONES

3-2. Top View



Parts List <Top View>

Parts No.	Stock No.	Description
1	47608900	Side Panel Ass'y (L)
⚠ 2	15022105	Power Transformer
3	47157300	AC Cord Cover
⚠ 4	38004300	Power Supply Cord (BS)
⚠	38004500	Power Supply Cord
⚠ 5	07204700	Slide SW., Voltage Selector (EU)
6	46739400	Slide SW., SPEAKER, INPEDANCE SELECTOR
7	48123100	8P Terminal Board, SPEAKERS
8	46363800	4P Terminal Board, TAPE-1, TAPE-2/PCM
9	22301510	Ground Terminal
10	46438100	2P Terminal Board, PHONO
11	46546800	6P Terminal Board, TUNER, CD, AUX
12	47638600	Side Panel Ass'y (R)
13	47637400	Joint Shaft (2)
14	47637300	Joint Shaft (1)

4. ADJUSTMENT (See Top View on page 8)

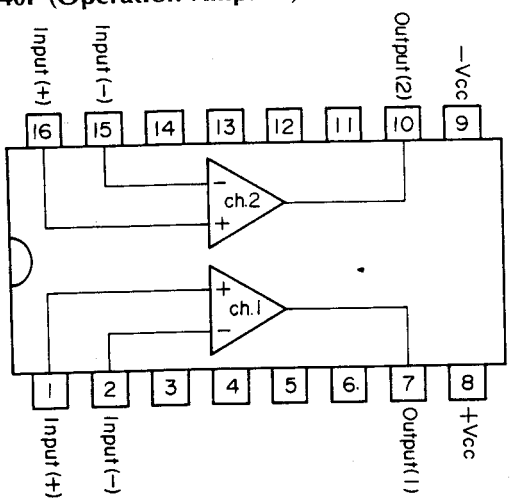
4-1. Driver Circuit Adjustment

Note: 1) Master Volume .... Minimum
2) Room Temperature ... 18°C ~ 28°C (65°F ~ 83°F)
3) For this adjustment, run the unit for more than 20 minutes after the power is switched ON.
4) Before turning ON power switch, set kVR1 on F-4702 to center position.
5) Before turning ON power switch, set kVR2 on F-4702 fully counterclockwise.

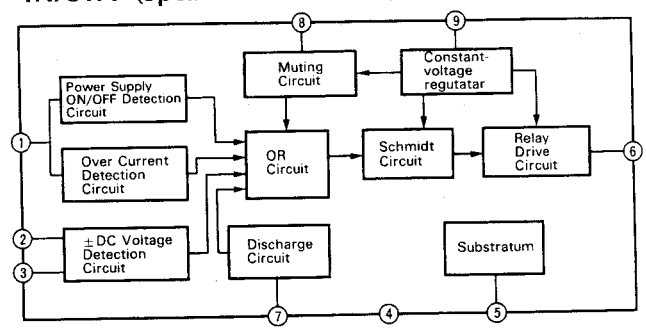
STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	DC 0V Adj. L-CH	Speaker Terminal (L-ch)	kVR1, L-ch (F-4702)	DC 0V ± 5 mV	
2.	DC 0V Adj. R-CH	Speaker Terminal (R-ch)	kVR1, R-ch (F-4702)	DC 0V ± 5 mV	
3.	Bias Current Adj. L-CH	Between emitters of power transistors (kQ13 & kQ14) (Across kR50L)	kVR2, L-ch (F-4702)	DC 10mV ± 3 mV	
4.	Bias Current Adj. R-CH	Between emitters of power transistors (kQ13 & kQ14) (Across kR50R)	kVR2, R-ch (F-4702)	DC 10mV ± 3 mV	

5. INTERIOR BLOCK DIAGRAM OF IC

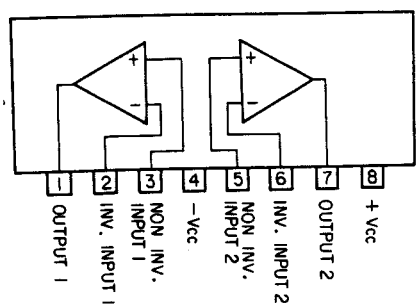
•M5240P (Operation Amp. IC)



•TA7317P (Speaker Protector IC)

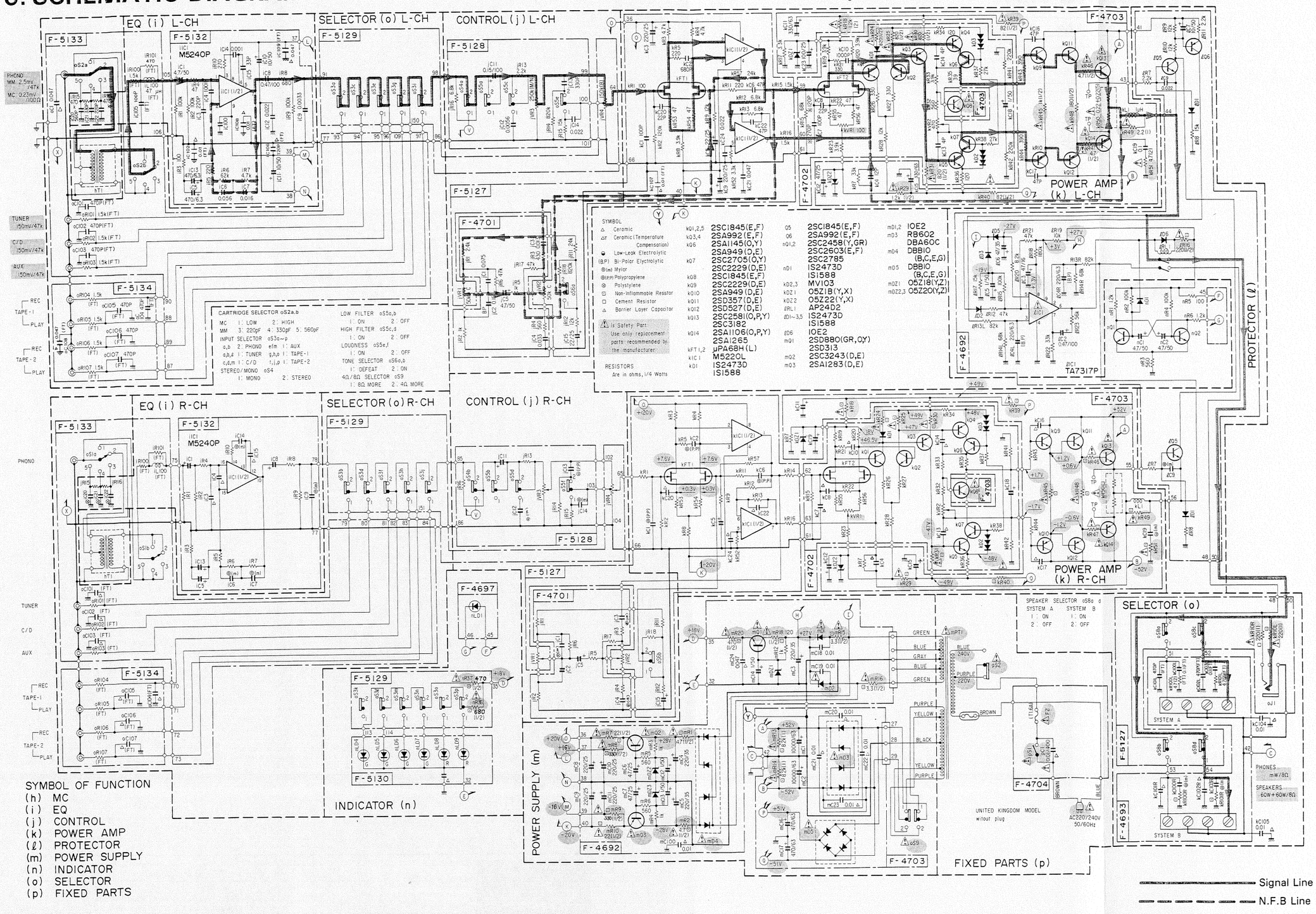


•M5220L (Audio Pre Amp. IC)



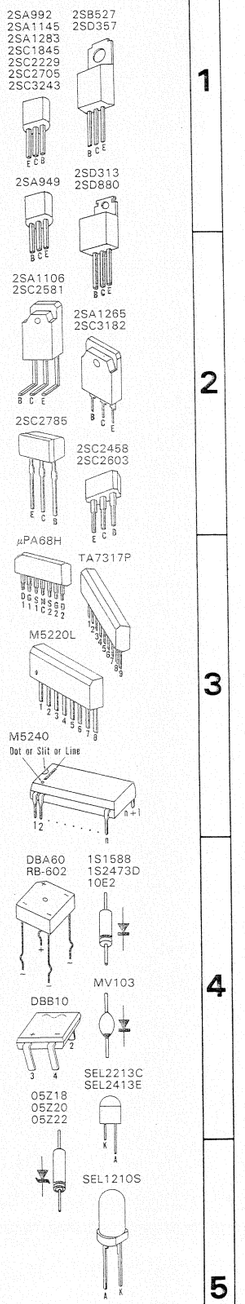
6. SCHEMATIC DIAGRAM

* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



kQ1,2,5	2SC1845(E,F)	Q5	2SC1845(E,F)	mD1,2	1OE2		
kQ3,4	2SA992(E,F)	Q6	2SA992(E,F)	mD3	RB602		
kQ6	2SA1145(O,Y)	nQ1,2	2SC2458(Y,GR)	mD4	DBA60C		
kQ7	2SA949(O,E)		2SC2603(E,F)	mD5	DBB10		
	2SC2705(O,Y)	nD1	2SC2785		(B,C,E,G)		
kQ8	2SC2229(D,E)		1S2473D	mDZ1	DBB10		
kQ9	2SC1845(E,F)		1S1588		(B,C,E,G)		
kQ10	2SC2229(D,E)	kD2,3	MV103	mDZ1	05Z18(Y,Z)		
kQ11	2SA949(D,E)	kDZ1	05Z18(Y,X)	mDZ2,3	05Z20(Y,Z)		
kQ12	2SD357(D,E)	kDZ2	05Z22(Y,X)				
kQ13	2SD527(D,E)	ℓRL1	AP224D2				
	2SC2258(I,O,P,Y)	ℓD1~3,5	1S2473D				
kQ14	2SC3182		1S1588				
kFT1,2	2SA1106(O,P,Y)	ℓD6	1OE2				
kIC1	2SA1265	mD1	2SD880(GR,OY)				
kD1	μPA68H(L)		2SD313				
	M5220L	mQ2	2SC3243(D,E)				
	1S2473D	mQ3	2SA1283(D,E)				
	1S1588						

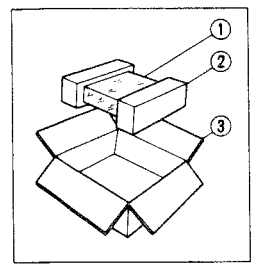
SYMBOL
△ Ceramic
△T Ceramic(Temperature Compensation)
Low-Leak Electrolytic
(B.P) Bi-Polar Elcytrolytic
Ⓜ(M) Mylar
Ⓟ(PP) Polypropylene
Ⓢ Polystylene
Non-Inflammable Resistor
Cement Resistor
Barrier Layer Capacitor
⚠ is Safety Part. Use only replacement parts recommended by the manufacturer.
RESISTORS Are in ohms, 1/4 Watts



1 2 3 4 5

7. PACKING LIST

Parts No.	Stock No.	Description
1	47858600	Vinyl Bag
2	47675300	Styrofoam Packing
3	27013700	Carton Case



8. ACCESSORY LIST

	Stock No.	Description
	46985400	Operating Instruction